

From: Miller, Garyg
To: [Ells, Steve](#)
Subject: FW: Documentation on San Jacinto River Flooding
Date: Thursday, April 03, 2014 3:56:00 PM
Attachments: [San Jacinto 1994 Flood - USGS Fact Sheet.pdf](#)
[NTSB San Jac Pipeline Investigation - 1994 Flood - 1996.pdf](#)

Some comments I sent out to our other reviewers.

Thanks,

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From: Miller, Garyg
Sent: Wednesday, April 02, 2014 10:25 AM
To: 'Stephen Ellis'; 'Allen, Bob (PCS)'; 'Linda Henry'; Garry McMahan; 'Schroeder, Paul R ERDC-RDE-EL-MS'; 'Jane Sarosdy'; Barth, Edwin; Becher, Kent
Cc: Sanchez, Carlos; Turner, Philip; Foster, Anne; Salinas, Amy; Werner, Robert; Walters, Donn
Subject: Documentation on San Jacinto River Flooding

Folks,

Please consider the following in your reviews of the San Jacinto Feasibility Study and the relative merits of the alternatives:

Here are several reports about the severity of flooding on the San Jacinto River. A concern is potential scour near the waste pits. Please see p. 38 of the NTSB report regarding the 1994 storm (approximate 100-year flood event) that notes there was 10 to 12-feet of scour just south of the I-10 bridge. Comparing this to the model predicted scour for a 100-year storm, the Feasibility Study Report, Appendix A, Figure 2-6, "Spatial Distribution of Predicted Net Erosion During 100-Year Flood", the San Jacinto model predicts no more than 25 cm (about 10") in the same area where 10 to 12-feet of scour actually happened.

EPA has guidance on design of armor layer caps (GUIDANCE FOR IN-SITU SUBAQUEOUS CAPPING OF CONTAMINATED SEDIMENTS: Appendix A: Armor Layer Design) – here is a link: <http://www.epa.gov/glnpo/sediment/iscmain/appnda.pdf>
On page A-1, it states : "Factors pertinent to flood flows, navigation effects, and wind wave induced currents are presented and then formulas and sample calculations are provided. Less predictable forces on ISC (in-site capping) such as scouring from ice and debris, flow from velocities generated by channel blockages such as ice dams, or massive bank failure are not evaluated by this analysis. Designers of ISC should consider the significance of these forces and potential effects in the evaluation of the feasibility of ISC."

Regarding the 1994 flood, the NTSB report states (p. 2) that:

"By any measure, the flooding of October 1994 was an extreme and dangerous event. Historical peak stream flows were exceeded at 23

of the 43 stations monitored in the area. The 100-year-flood, which is defined as the peak stream flow having a 1 percent chance of being equaled or exceeded in any given year, was equaled at 1 and exceeded at 18 of 43 stations. For those stations where the 100- year-flood was exceeded, the flood was from 1.1 to 2.9 times the 100-year-flood.

The flooding caused major soil erosion in the flood plain and river channel, including the creation of water channels outside the San Jacinto River bed. The flood waters scoured the riverbed and banks, destabilized roads and bridges, and inundated area homes. The largest new channel (approximately 510 feet wide and 15 feet deep) was created when the river cut through the Banana Bend oxbow just west of the Rio Villa Park subdivision. A second major channel cut through Banana Bend just north of the channel through the oxbow. Both these channels cut through areas where sand mining had been performed previously."

Thanks,

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